

CALIFORNIA STATE DEPARTMENT OF PUBLIC HEALTH

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Weekly Bulletin

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GUY P. JONES
EDITOR

*Psittacosis**

By C. T. ROOME, M.D., City Health Officer, Santa Barbara

There is an old saying that the surest way of learning anything about a subject is to try and teach it or write an article about it. If there is any justification for this paper, which is admittedly very academic, it lies in the fact that it has at least stimulated the writer's interest in and knowledge of this disease. There have been many able monographs and papers written on psittacosis in the past few years and I shall only attempt to glean from them the salient points which I believe should be emphasized in order to refresh our memory.

Briefly, regarding the history of this disease, as you are no doubt aware, according to the government, reports were made in this country by Vickery and Richardson in 1904 and Schott in 1906. In "Recent Studies on Psittacosis" by Meyer, Eddie and Stevens, published in May, 1935, they mention the report of outbreaks in Europe in the early nineties, and that the clinical manifestations were recognized as early as 1879 as a definite entity. While sporadic cases and local outbreaks have occurred at intervals during the past two decades, it was, however, the pandemic of 1929 and 1930 that focused the attention of health and lay officials alike to the real importance of the disease as a major public health problem, not only of national but international importance.

As in many other similar instances where public health problems have been concerned, the financial interests were a considerable factor that had to be considered in formulating the necessary regulatory measures. At the time of and following the outbreak of 1929, in rapid succession cases and outbreaks in various parts of the country followed. According to Dr. Meyer, from 1929 to 1934 there were 130 cases developed in twelve different states of this country, all the way from Massachusetts to Oregon. Due to the fact that all these cases developed from birds that came from California, the health authorities of this state at once initiated a thorough investigation of the whole bird industry and instituted measures for its control in the light of the best epidemiological knowledge. "They found," according to Dr. Meyer, "that there existed a vast bird-breeding industry in parakeets and other birds concerning which very little had been known; that laboratory examination showed the presence of psittacosis in many of the birds, and that aside from the public health aspect, the control of this disease assumed the importance of an industrial problem." This, then, was the situation with which the health authorities were confronted, and to their credit be it said that within a very short time they have changed the serious conditions in the industry and evolved methods of regulation and control from both a local and national

*Read before Health Officers' Section, League of California Municipalities, San Francisco, September 25, 1935.

standpoint which have kept abreast of the latest clinical, laboratory and epidemiological knowledge.

The history of the discovery and identification of the exciting cause of psittacosis I shall not take time to discuss. Suffice it to say that it belongs to the class of filterable viruses and is evidently associated with the so-called psittacosis bodies. These ovoid or spherical bodies, first described by Levinthal, are found at autopsy in necrotic areas in the liver and spleen of animals succumbing to this disease. The virulence of the virus is variable, just as the resistance of man or animal to its invasion is variable. Therefore, naturally, the question of healthy birds or humans being carriers of virulent organisms holds true here as in any other infectious disease, and the same virus may cause illness of varying severity in different individuals. From a diagnostic standpoint we must bear in mind one particular characteristic of this organism and that is, according to Dr. Meyer, that "the particle size and intracellular location of these elemental bodies render filtration of the virulent specimens an irregular procedure and the intraperitoneal injection of mice with the suspected material constitutes the best and safest procedure to demonstrate the presence of the virus." For further information regarding its special characteristics as well as other epidemiological considerations I would refer you to the article already quoted. From our standpoint as physicians and health officers we must be immediately suspicious of peculiar types of illness where the patient has been associated with any birds, sick or well, whether of the immediate psittacine family or not. While much has yet to be learned regarding the mode of transmission of the virus from animal to man, it should be remembered that the organism is very highly infectious, that contact may be made through a very short exposure, and over a considerable space of time. Aerial and manual methods of transmission are both involved and the portal of entry in man is generally through the upper respiratory tract.

Incidence.—Psittacosis is evidently no respecter of climate, sex, age or geographical distribution. In certain locations more cases have occurred during the winter months, which is possibly explained by closer indoor exposure. It is widely distributed in this country and abroad. Children would seem to be less susceptible than adults as the latter class furnish not only the majority of the cases but also of the fatalities. More cases develop in women than men and the mortality rate may run anywhere from 20 to 40 per cent. Dr. Meyer mentions one house epidemic in California where the mortality was 100 per cent.

Of 187 cases no fatality occurred below the age of 38 years.

Incubation Period.—It is reported that the time from the first known exposure to infected birds to the date of onset of symptoms in some 169 cases varied from 6 to 82 days. In some 45 cases it was 6 to 15 days, and this is usually given as the ordinary incubation period, but it must be borne in mind that a longer period is very possible.

Symptomatology.—In man the manifestations of the disease may be mild or severe, both as to onset and subsequent course. In a typical case it is ushered in with prostration, chilly sensations or chills, followed by a fever of from 100° to 102° with irregular remissions and the temperature may rise during the second week to as high as 105°. The pulse, as in typhoid or influenza (the two diseases with which psittacosis is most commonly confused), is slower than would be expected for the height of the fever. Epistaxis is not uncommon. There is usually not much cough early in the disease, but this symptom may become more pronounced later on, with corresponding expectoration. The tongue is similar to that seen in typhoid, and the appetite is poor. Abdominal distension and even pain are often marked and patients frequently complain of pain in the back and joints, or more generalized aching, as in grippe. The nervous symptoms are usually pronounced and may range from restlessness, nervousness and insomnia to real delirium or coma, in the more severe infections. While early in the disease the white count may be moderately increased, very soon a characteristic leukopenia develops, with more or less secondary anaemia. In one case the recorded count was 600 white cells on the twentieth day of the illness. Albuminuria is frequent. The sputum, if present, is more apt to be light colored, very viscous and seldom contains blood. The amount of the virus it may contain may vary greatly during the course of the disease and the various organisms of a mixed infection are also present.

The physical signs are similar to those of any correspondingly severe case of typhoid fever, although the spleen is not usually palpable. In those cases where the cough becomes a marked symptom there are usually focal signs to be found in the lungs, although not so well definable as in lobar pneumonia. In these cases the X-ray findings are apt to be quite suggestive, if not distinctive. Localized areas in the lung involved are seen, but the shadows have a peculiar opaque homogeneous appearance that is quite different from the typical pneumonic process. Gutzeit and Johnson, of Germany, claim that the struc-

ture and outline of infected areas in the lung can be differentiated from those of lobar and bronco-pneumonia by their uniform and finely granular structure. The early appearance is that of a fine veil of even density which seems to be spread over still visible normal lung structure. In one case which the writer saw in Santa Barbara with Dr. A. Bruce Steele, such a process developed in the left lung and at the end of a week, while this area had cleared, another similar one had developed in the right lung. Relapses in this disease are not uncommon. In cases that recover the temperature usually drops by lysis. Thrombosis, phlebitis or embolus and bronco-pneumonia are the more common complications.

Diagnosis.—May we again repeat that in any illness where there is a history of the patient having been in direct or indirect contact with birds, sick or well, especially of the psittacine family, the possibility of psittacosis must be carefully considered. In spite of the fact that it may seem unnecessary to mention, I wish to emphasize that a careful history is most important. In order that its accuracy may be depended upon, rechecks must be made. The patients themselves are usually too sick to be able to think accurately and other members of the family may be ignorant of the facts. Furthermore, from our standpoint as health officers, an accurate history to be complete must not only include the patient's possible exposure but must include the source of the offending bird or other mode of infection. While the organism has been found in the blood stream early in the disease, this is not generally a practical method of diagnosis. Usually the patient is not seen for the first time until later on in the course of the disease when the virus is not so apt to be demonstrated by blood examination. The most valuable procedure, as mentioned above, is the injection of mice with the infected sputum, or material from a diseased bird. The leukopenia, with relatively slow pulse to high temperature, the history of possible exposure, with certain negative findings, are distinct aids.

Pathology.—In persons dying from psittacosis, the autopsy findings are not relatively startling. The general picture is one of severe septicaemia, with definite changes in the lungs and usually in the liver and spleen. The latter two organs are usually enlarged and congested and may show small areas of necrosis. There may be hemorrhagic areas in the walls of the gastro-intestinal tract. The lungs show marked congestion with abundant serous exudate. There is a degeneration and desquamation of the epithelium of the air vesicles and bronchi with capillary thrombi or even capillary necrosis. There is a relative

absence of polymorphonuclear leukocytes which is in keeping with the leukopenia seen clinically. There are significant changes in the central nervous system which consist of areas of infiltration with phagocytes or small hemorrhages. There are also circumscribed areas of degeneration of the myelin or even softening. The principal findings, therefore, in the lungs and nervous system correspond generally to the symptoms referable to these organs.

Treatment.—As far as the writer is aware, nothing specific has yet been introduced for the treatment of this disease. Good nursing care, preferably in a hospital under strict individual precautions and isolation, general supportive measures and blood transfusions in the more critical cases are the main considerations that we are able to offer.

General and Specific Control Measures:

1. Early recognition, isolation and reporting of cases.
2. Careful investigation for the source of the infection.
3. Rigid quarantine of birds exposed and destruction of any suspected birds for laboratory examination.
4. Careful disinfection of aviaries or pet shops where diseased birds have been found.
5. Strict adherence to state and federal regulations governing the traffic in birds of the psittacine family.
6. Local ordinance requiring licensing of all bird shops; records kept of all birds bought or sold, including date and place; reporting to local health department the illness or death of any bird in the establishment.

DRIED FRUITS

At the holiday season many complaints were received relative to the poor quality of dried fruits that were placed in fancy packages for Christmas trade. The packers made a serious effort to prepare a first class Christmas fruit pack, but some of the smaller concerns have been guilty of attempting to recondition moldy, insect infested fruit for consumer consumption. An investigation revealed one lot of 1000 pounds of dried fruit that was considerably below standard. This was in a single packing plant. It was quarantined and resorting denied as the material could not be brought up to standard. During November approximately 5000 pounds of unfit dried fruit has been destroyed.

When we find the thing for which we are best fitted, work is an unending joy.—Leon J. Richardson.

MORBIDITY

Complete Reports for Following Diseases for Week Ending
December 28, 1935

Chickenpox

242 cases: Alameda County 9, Alameda 1, Berkeley 5, Emeryville 3, Oakland 2, Piedmont 2, Colusa 1, Contra Costa County 8, Hercules 1, Richmond 2, Fresno County 7, Coalinga 1, Fresno 2, Kern County 1, Los Angeles County 5, Alhambra 1, Burbank 2, Culver City 3, El Segundo 1, Glendale 4, Huntington Park 3, Long Beach 1, Los Angeles 29, Montebello 1, Pasadena 1, San Fernando 2, San Marino 1, Santa Monica 3, South Pasadena 3, Whittier 2, Maywood 1, Merced County 1, Merced 1, Monterey County 1, Pacific Grove 1, Napa 1, Nevada County 1, Orange County 1, Orange 5, Santa Ana 12, Placer County 1, Plumas County 2, Riverside 1, Sacramento 9, San Bernardino County 1, San Diego 32, San Francisco 31, Manteca 1, Stockton 13, Tracy 2, San Mateo County 1, Santa Maria 6, Santa Clara County 2, Palo Alto 1, San Jose 1, Redding 2, Sonoma County 1, Ventura County 1, Woodland 2.

Diphtheria

43 cases: Alameda County 3, Hayward 1, Oakland 2, Fresno County 1, Lassen County 1, Los Angeles County 6, La Verne 1, Los Angeles 11, Pasadena 1, La Habra 1, San Bernardino County 1, San Bernardino 3, San Diego 1, San Luis Obispo County 1, Arroyo Grande 1, San Luis Obispo 2, Santa Barbara 1, Santa Clara County 2, Tulare County 1, Ventura County 2.

German Measles

51 cases: Alameda County 4, Albany 3, Berkeley 2, Hayward 1, Oakland 2, Contra Costa County 6, Richmond 3, Kern County 1, Lake County 1, Long Beach 2, Los Angeles 4, South Pasadena 1, Lynwood 1, Monterey County 1, Orange County 1, Santa Ana 3, Tustin 2, Sacramento 1, San Diego 1, San Francisco 9, South San Francisco 1, Woodland 1.

Influenza

44 cases: Berkeley 4, Oakland 1, San Leandro 1, Calaveras County 3, Bakersfield 1, Lake County 1, Los Angeles County 3, Los Angeles 26, Pomona 1, San Diego 1, San Francisco 1, Turlock 1.

Measles

221 cases: Berkeley 5, Oakland 6, Oroville 7, Colusa County 1, Richmond 1, Fresno 2, Bakersfield 1, Los Angeles County 14, Glendale 2, Long Beach 1, Los Angeles 24, Pasadena 1, Pomona 3, Santa Monica 1, South Pasadena 1, Lynwood 1, South Gate 1, Madera 6, Alturas 2, Monterey County 10, Carmel 3, Salinas 7, Napa County 1, Napa 1, Fullerton 1, Plumas County 1, Riverside County 1, Sacramento 1, San Francisco 70, San Luis Obispo County 8, Santa Barbara County 4, Lompoc 1, Santa Barbara 1, Santa Clara County 6, Gilroy 1, Los Gatos 2, Mountain View 1, Palo Alto 2, San Jose 1, Santa Clara 1, Sunnyvale 1, Willow Glen 1, Sonoma County 1, Red Bluff 1, Ventura County 5, Yolo County 5, Woodland 1, California 2.*

Mumps

123 cases: Albany 1, Berkeley 1, Oakland 7, Piedmont 1, Contra Costa County 1, Pittsburg 1, Richmond 6, Fresno County 2, Fresno 2, Kern County 2, Los Angeles County 5, Claremont 1, Long Beach 6, Los Angeles 4, Pasadena 1, Pomona 5, Santa Monica 1, Sierra Madre 1, Mariposa County 1, Yosemite 1, Monterey County 1, Salinas 1, Anaheim 1, Orange 1, Santa Ana 2, Corona 28, Riverside 3, Sacramento 10, San Diego 1, San Francisco 2, San Joaquin County 4, Stockton 5, San Luis Obispo 4, Lompoc 2, Santa Clara County 1, San Jose 2, Redding 1, Vacaville 1, Tulare County 1, Ventura County 1, Yolo County 1.

Pneumonia (Lobar)

60 cases: Oakland 1, Fresno County 3, Fresno 1, Los Angeles County 5, Compton 2, Glendale 1, Glendora 1, Los Angeles 22, Pasadena 2, Pomona 1, San Fernando 1, Torrance 1, Modoc County 1, Santa Ana 1, Riverside County 1, Sacramento 1, San Bernardino County 1, Colton 1, Redlands 2, San Bernardino 3, San Diego 1, San Francisco 5, Tulare County 1, Yolo County 1.

Scarlet Fever

248 cases: Alameda 1, Berkeley 6, Oakland 3, Piedmont 2, Colusa 2, Fresno County 5, Kern County 5, Corcoran 1, Lassen County 2, Los Angeles County 13, Alhambra 2, Avalon 1, Burbank 1, Compton 1, Glendale 2, Long Beach 7, Los Angeles 30, Manhattan 1, Montebello 1, Pasadena 6, Pomona 1, Santa Monica 3, Vernon 1, Lynwood 1, Hawthorne 1, South Gate 4, Bell 1, Marin County 1, Monterey County 1, Pacific Grove 1, Napa County 1, St. Helena 1, Nevada City 5, Orange County 2, Fullerton 1, Huntington Beach 1, Orange 1, Santa Ana 1, Placer County 1, Plumas County 4, Riverside County 6, Riverside 2, Sacramento County 1, Sacramento 20, San Bernardino

* Cases charged to "California" represent patients ill before entering the state or those who contracted their illness traveling about the state throughout the incubation period of the disease. These cases are not chargeable to any one locality.

County 1, Colton 2, Redlands 1, San Bernardino 2, Coronado 1, San Diego 14, San Francisco 28, San Joaquin County 1, Stockton 2, Tracy 1, San Luis Obispo County 1, San Mateo County 3, Redwood City 1, San Mateo 1, Lompoc 1, Santa Clara County 2, Palo Alto 1, San Jose 1, Santa Cruz County 1, Watsonville 1, Yreka 1, Solano County 2, Sonoma County 9, Healdsburg 1, Turlock 1, Sutter County 1, Tulare County 4, Tuolumne County 1, Ventura County 1, Fillmore 1, Davis 4, Woodland 2.

Smallpox

4 cases: Monterey County 2, Riverside 1, San Bernardino 1.

Typhoid Fever

10 cases: Amador County 1, Willits 1, Sacramento County 1, California 7.*

Whooping Cough

97 cases: Berkeley 4, Oakland 3, Los Angeles County 10, Beverly Hills 1, Huntington Park 1, Long Beach 4, Los Angeles 20, Monrovia 1, South Gate 2, Pacific Grove 1, Nevada County 4, Fullerton 1, Santa Ana 1, Riverside 1, Sacramento 3, San Diego 4, San Francisco 14, Manteca 3, San Luis Obispo County 1, San Jose 3, Santa Cruz County 7, Sonoma County 3, Ventura County 1, Fillmore 2, Oxnard 2.

Meningitis (Epidemic)

3 cases: Berkeley 1, Los Angeles 1, San Bernardino County 1.

Pellagra

One case: San Francisco.

Poliomyelitis

5 cases: Lassen County 1, Inglewood 1, San Luis Obispo 1, Redding 1, Montague 1.

Trachoma

One case: Santa Barbara County.

Encephalitis (Epidemic)

One case: San Francisco.

Paratyphoid Fever

3 cases: Colusa County 1, Los Angeles County 1, Los Angeles 1.

Food Poisoning

2 cases: San Francisco.

Undulant Fever

One case: Sierra Madre.

Septic Sore Throat (Epidemic)

One case: Los Angeles County.

Rabies (Animal)

16 cases: Compton 1, Los Angeles 11, South Gate 1, San Joaquin County 1, Stockton 1, Tulare County 1.

If you would live well in this world, strive to gain wisdom and to perfect your relations with your fellow-men.—Leon J. Richardson.

A man's reaction to blame, to his own blunders and the other fellow's censure—there's the deepest test of any human, including yourself. No matter how brilliant you may be, how charming or versatile, industrious or loyal, generous or honest, you're a flop and you're doomed to failure if you can't admit that you are in the wrong, take the blame and then forget it.—E. Robinson.

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